



1A/6 Rec'd PCT/PTO 07 APR 2006 PCT

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. 05-820)

In the Application of:

Haskell)
Serial No.: 10/551,798)
Filed: September 30, 2005)
Title: Phased Array Antenna System with)
Variable Electrical Tilt)

Art Unit: Unknown

Examiner: Not Assigned

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

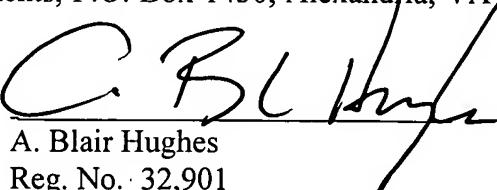
Sir:

TRANSMITTAL LETTER

In regard to the above identified application:

1. We are transmitting herewith the attached:
 - a. Information Disclosure Statement
 - b. Statement of Relevancy of Foreign Language Reference
 - c. Copy of Cited Non-U.S. Patent References
 - d. Return Receipt Postcard
2. With respect to additional fees:
 - a. Attached is a check in the amount of \$-0-
3. Please charge any additional fees or credit overpayment to Deposit Account No.13-2490. A duplicate copy of this sheet is enclosed.
4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1 hereinabove, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 4th day of April, 2006.

By :


A. Blair Hughes
Reg. No. 32,901

McDONNELL BOEHNEN,
HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. 05-820)

In the Application of:

Haskell) Art Unit: Unknown
Serial No.: 10/551,798)
Filed: September 30, 2005) Examiner: Not Assigned
Title: Phased Array Antenna System with)
Variable Electrical Tilt)

Statement of Relevancy of a Foreign Language Reference

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The JP 61172411 reference was cited in an Opposition of European patent application EP 1 239 534 by Radiation Y Microondas, S. A. The reference was cited as disclosing “a multi-stage linear array antenna which pretends to increase the beam tilting effect by setting the first phase shifter for each exciting elements so as to give a beam tilting angle larger than a required value and obtaining a required beam tilting angle by the combined phase shift by the first and second phase shifters so as to reduce a side lobe level produced during prorogation.”

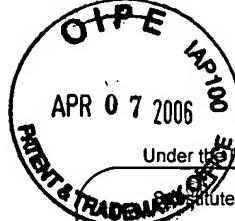
The Okuyama et al. reference was cited in an Opposition of European patent application EP 1 239 534 by Radiation Y Microondas, S. A. The reference was cited as disclosing “a base station antenna products that integrate technologies for beam forming, wind-load shedding and beam tilting. Its drawings show antenna structures serving 120° sectors and phase shifting arrangements.”

Respectfully submitted,
McDONNELL BOEHNEN HULBERT &
BERGHOFF LLP

By:

A. Blair Hughes
Reg. No. 32.901

Dated: April 4, 2006



Under the Paperwork Reduction Act of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

1

of

7

Complete if Known

Application Number	10/551,798
Filing Date	September 30, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
Attorney Docket Number	05-820

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 2,041,600	5-19-36	Friis	
		US- 2,239,775	3-2-39	Bruce	
		US- 2,245,660	10-12-38	Feldman et al.	
		US- 2,247,666	8-2-39	Potter	
		US- 2,961,620	11-22-60	Sommers	
		US- 3,277,481	10-4-66	Robin et al	
		US- 3,522,558	1-13-69	Stafford et al.	
		US- 4,241,352	12-23-80	Alspaugh et al	
		US- 4,249,181	2-3-81	Lee	
		US- 4,788,515	11-29-88	Wong et al.	
		US- 4,881,082	11-14-89	Graziano	
		US- 5,281,974	1-25-94	Kuramoto et al.	
		US- 4,905,012	2-27-90	Foti	
		US-			

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)			
		WO 89/07837	8-24-89	Wong et al.	
		WO 92/16061	9-17-92	Kangas	
		WO 93/15569	8-5-93	Franza et al.	
		WO 95/10862	4-20-95	Butland et al.	
		EP 0 531 090	3-29-00	Fujii et al.	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Shee

2

1

Complete if Known

Application Number	10/551,798
Filing Date	September 30, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
Attorney Docket Number	05-820

Sh

2

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)				
		EP 0 575 808	12-29-93	Hadzoglou et al.		
		GB 1 314 693	4-26-73			
		AU 38746/93	7-29-93	Butland et al.		
		AU 664625	11-23-95	Mews		
		JP 02-174302 - abstract	7-5-90	Nippon Telegraph		

Examiner Signature		Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.		

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

American LegalNet, Inc.
www.USCourtForms.com

Under the Panerwork Reduction Act of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

3

1

of

Complete if Known

Application Number	10/551,798
Filing Date	September 30, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
Attorney Docket Number	05-820

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁵
		Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)				
		JP 04-320121 abstract	11-10-92	Nippon Telegraph		
		JP 04-320122 abstract	11-10-92	Nippon Telegraph		
		JP 05-37222	2-12-93	NEC Corp		X
		JP 05-075340	3-26-93	Hitachi Chem Co.		
		JP 05-121902	5-18-93	Nippon Dengiyou		

Examiner Signature	Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language translation is attached.	

Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

American LegalNet, Inc.
www.USCourtForms.com

Under the Paperwork Reduction Act of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 4

of 7

Complete it. Know it. www.ams.org/apply

Application Number	10/551,798
Filing Date	September 20, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
Attorney Docket Number	05-820

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)			
		JP 05-121915	5-18-93	Sumitomo Electric	
		JP 61-172411	8-4-86		
		JP 61-006901	1-13-86	Kokusai Denshin	X
		JP 140985	5-20-94	Fujitsu Ltd	X
		JP 06-196927	7-15-94	NTT Idou Tsuushinmou	X

Examiner Signature | Date Considered

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

5

61

Complete if Known

Application Number	10/551,798
Filing Date	September 30, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
Attorney Docket Number	05-820

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁵
		Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)				
		JP 06-260823	9-16-94	Mitsubishi Electric		X
		JP 06-326501	11-25-94	Sumitomo Electric		X
		GB 2 034 525	6-4-80	Marconi Company		
		WO 01/29926	4-26-01	Deltec Telesystems		
		WO 03/036756	5-1-03	QinetiQ Ltd.		

Examiner Signature _____ Date Considered _____

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 6

6

U. S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁵
		Country Code ³ "Number ⁴ "Kind Code ⁵ (if known)				
		WO 03/043127	5-22-03	Qinetiq Ltd.		
		EP 1 026 778	8-9-00	Lucent		
		JP 2001-211025 – English Abstract		NTT IDO		
		JP 09-148835 – English Abstract	6-6-97	Nippon		

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995 no Persons are required to respond to a collection of information unless it contains a valid OMR control number.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			
<i>(Use as many sheets as necessary)</i>			
Sheet	7		
of	7		
Attorney Docket Number			
05-820			

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Strickland, Peter "Microstrip Base Station Antennas for Cellular Communications", IEEE, pp. 166-171 (1991)	
		Bacon, "Variable Elevation Beam-Aerial Systems for 1 1/2 Metres", Journal IEE, pp. 539-544 (1946)	
		Forster, et al. "A Conical Beam Ship Array Antenna with Infinitely Variable Control of the Elevation Angle", pp. 17-20 (1973)	
		Hansen, "Microwave Scanning Antennas" Vol. 3 Array Systems, pp. 2-7 (1966)	
		Smith, textbook: "Circuits, Devices and Systems", A First Course in Electrical Engineering", 4 th Ed., pp. 680-681 (1984)	
		Okuyama et al., "Base-Station Antenna Systems for Car and Handheld Cellular Phones", Mitsubishi Denki Giho, Vol. 68, no. 12, pp. 23-26 (1994)	
		Sumitomo Technical Review, September (1993)	X
		Brochure, "Brown Boveri Phaser for the Horizontal Slewing of Curtain Antennas", Boveri & Cie AG, Mannheim, RFA Classif. n° 1601/242	
		CEL-901 Cellular Antenna Controller User's Manual", issued on 2 April 1992, in the name of CAL Corporation (1991)	

Examiner Signature		Date Considered
--------------------	--	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.